

REMARKS

Claims 1-5, 9 and 10 remain in this application. Claims 1-5 and 9 have been amended by this amendment to overcome the Examiner's objections and rejections under 35 U.S.C. §112. These amendments do not raise any new issues and, in fact, simplify issues in this case and thus should be entered.

New Figs. 3A-3C and 4 have been added along with the appropriate description. These add no new matter, since they only repeat what was previously in other parts of the application, that is, the specification and claims.

Claims 1, 5, 9 and 10 stand rejected as anticipated by Gushima et al., the Examiner indicating that, if not anticipated, they would be obvious over Gushima et al in view of Takagi. Claims 2-4 stand rejected over these references combined with DVD-RAM art. Applicants respectfully traverse these rejections. ✓

The present invention is characterized by setting a conversion multiplying factor between a period of a signal obtained by detecting the wobble or deformation and a period of a recording clock generated from the signal obtained by detecting the wobble or deformation (see claims 1, 5, 9 and 10).

In general, when the recording clock is generated from the signal obtained by detecting the wobble or deformation, it is not necessary to set a conversion multiplying factor. Since each sector on the medium has a constant number of channel bits, once a recording clock is generated, the recording or reproducing operation can be executed in synchronism with the recording clock. Therefore, it does not need to set the conversion multiplying factor.

The present invention includes the above-noted feature of setting a conversion multiplying factor between a period of a signal obtained by detecting the wobble or deformation and a period of a recording clock generated from the signal obtained by detecting the wobble or deformation. The feature make it possible to change the total number of channel bits in each sector. By making the total number of channel bits written into a single sector variable, it is

possible to achieve both a DVD-R type recording mark arrangement and a DVD-RAM type recording mark arrangement and other arrangements (refer to the description from page 4, line 25 to page 5, line 24).

In the cited reference to Gushima et al., the details of modulation recording circuit 17 shown in Fig. 6 are shown in Fig. 13. Referring to Fig. 13, modulated data is sent to a rate transfer unit 47 and clocks are generated by a recording clock generator 49. The rate transfer unit 47 is a circuit block for converting the modulation data of a modulated specific rate into data having the rate of the recording clock signal generated in the clock generator (refer to the description in lines 44-67 in column 14). It is to be noted that the signal generated by the recording clock generator 49 is a fixed clock formed by a PLL and therefore it is not a recording clock generated from the signal obtained by detecting the wobble or deformation as in the present invention.

In Gushima et al., in order to achieve the MCAV method (refer to the description in lines 44-62 in column 1), the frequency of a recording clock signal varies zone by zone (refer to lines 47-48 in column 14). Therefore, Gushima et al is basically different from the present invention which has the feature of setting the conversion multiplying factor between the period of the signal obtained by detecting the wobble or deformation and the period of the recording clock to make the total number of channel bits written into a single sector variable.

In the cited reference to Takagi, it is described that defective sector discrimination is performed by a sector unit (refer to Abstract and others). Takagi does not disclose any wobble structures and therefore Takagi does not disclose or suggest setting the conversion multiplying factor between the period of the signal obtained by detecting the wobble or deformation and the period of the recording clock formed from the signal obtained by detecting the wobble or deformation. Accordingly, Takagi is substantially different from the present invention and does not make up for the deficiencies in Gushima et al.

The Examiner also raised the possibility of using two additional references. Adding these also does not supply the missing teaching.

In W098/43241A, as described in Fig. 1 and the explanation thereof, a plurality of write clocks are formed from the wobble clocks. The plurality of write clocks have the same frequency, but phases different from each other. A laser is driven by a selected one of the write clocks.

It is to be noted that the reference discloses generating a plurality of write clocks having the same frequency and phases different from each other. The reference does not disclose setting a conversion multiplying factor between the period of the signal obtained by detecting the wobble or deformation and the period of the recording clock formed from the signal obtained by detecting the wobble or deformation. Accordingly, the reference is also different from the claimed invention.

EP0800276A1 discloses implementation of an internal frequency conversion in which a frequency is multiplied by using a plurality of multipliers to obtain a required frequency having necessary multiplying ratio. However, EP0800276A1 does not disclose applying the frequency to a recording device and is not analogous to the present invention. It is to be noted that this reference also does not disclose setting the conversion multiplying factor between the period of the signal obtained by detecting the wobble or deformation and the period of the recording clock as the present invention.

As set out above, no reference discloses or suggests setting the conversion multiplying factor between the period of the signal obtained by detecting the wobble or deformation and the period of the recording clock. In the present invention, this feature makes it possible to change the whole number of channel bits in each sector. By making the total number of channel bits written into a single sector variable, it is possible to achieve both the DVD-R type recording mark arrangement and the DVD-RAM type recording mark arrangement along with other arrangements.

In view of the above, Applicant's submit that the above amendments should be entered and all claims in this application allowed.

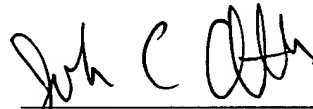
The Examiner is invited to call the undersigned at (202) 220-4200 to discuss any information concerning this application. Alternatively, entry for purposes of appeal is proper and should be made.

The Examiner is requested, after reviewing this response to contact the undersigned to discuss any remaining issues in this application.

The Office is authorized to charge any additional fees or credit any overpayment under 37 C.F.R. § 1.16 or 1.17 to Deposit Account No. 11-0600.

Respectfully submitted,

Date: June 8, 2004



John C. Altmiller

Registration No. 25,951

KENYON & KENYON
1500 K Street, N.W., Suite 700
Washington, D.C. 20005
Tel.: (202) 220-4200
Fax.: (202) 220-4201
495022_1.DOC/jebouling